NOTES.

Reuter's correspondent at Amsterdam reports that, according to a telegram received from Batavia, there has been an eruption of the volcano of Galoenggoen, near Garoet, in the Preang Regency. Several native villages are said to have been destroyed. The great eruption of this volcano in 1822 involved an enormous loss of life and property.

A severe shock of earthquake is reported by the Central News correspondent at Tokio as having occurred on Monday night in the province of Akita. The centre of the disturbance was apparently the town of Sakata, which was almost entirely destroyed.

We regret to note the death of Mr. Charles Carpmael, the Director of the Meteorological Service of Canada. He died at Hastings on Saturday. The death is also announced of General Robson Benson, whose work in connection with the development of the Botanic Gardens at Madras and Rangoon earned for him the esteem of all botanists; and of Mr. Edwin Clark, the engineer. Mr. Clark was a Fellow of the Royal Astronomical and Meteorological Societies.

We learn from the *American Naturalist* that the Salt Lake Literary and Scientific Association has recently given sixty thousand dollars for the endowment of a chair of Geology in the University of Utah. The chair has been named the Deseret Professorship of Geology, and Dr. J. E. Talmage has been appointed to it.

A correspondent informs us that he recently tested two samples of oxygen supplied for the use of lanternists, and found them to be mixtures of sixty-five per cent. oxygen and thirty-five per cent. nitrogen. Persons who use compressed oxygen should therefore obtain, from the dealer who supplies the gas, some kind of guarantee that it is up to a certain standard of purity.

A very fine auroral display was observed in New Zealand and the south-eastern parts of Australia on August 20. Mr. H. C. Russell writes to us, that at Sydney the south-eastern sky assumed a peculiar green tint at 6.35 p.m. Clouds interfered with his view of the display, and finally blotted out the auroral light and streamers at 8.33 p.m. In New Zealand, the aurora is said to have been very brilliant.

The London and Provincial Ornithological Society will hold their ninth annual show at the Royal Aquarium, Westminster, on Tuesday, Wednesday, and Thursday, October 30, 31, and November 1. The extent of the show may be judged by the fact that over one thousand British and foreign birds will be on view.

The following strange incident is described in the *Times* as having occurred in the reptile-house of the Zoological Society's menagerie, the scene being one of the compartments in which the boa-constrictors are confined. Two large boas occupied the chamber, one snake being nine feet and the other eight feet long. When the house was opened in the morning only one boa was found in this cage; the other had disappeared. Though the survivor was only a foot longer than the other snake, there was no reason to doubt that it had completely swallowed its companion. It was so distended that the scales were almost separated, and it was unable either to coil itself or to move. There is every reason to believe that in accomplishing this almost incredible feat the snake acted by mistake, and that it devoured its companion by what deserves to be called an accident. The larger boa was fed with a pigeon before the house was closed for the night. It swallowed the bird, and the other boa was then given a pigeon, which it had begun to swallow when the snakes were left for the night. It is believed that the larger snake then caught hold of the part of the pigeon which projected from the other's mouth, and gradually enveloped, not only the bird, but the head of the other snake. Once begun, the swallowing process would go on almost mechanically. As the swallowed snake was only one foot less in length than the swallower and of nearly equal bulk, weighing about fifty pounds, the gastric juices must have dissolved the portion which first entered the snake's stomach before the remainder was drawn into the jaws. Though still rather lethargic, the surviving boa is not injured by its meal. It coils itself up without difficulty, and its scales have the beautiful iridescent bloom peculiar to the skin of snakes when in perfect health.

The Committee of the Bexley Cottage Hospital are to be commended for their enterprise. They have induced Mr. Hiram S. Maxim to consent to exhibit his flying machine to the public on Saturday afternoon, November 3, at Baldwin's Park, Bexley, and to give an account of its history, construction, and future. The machine will be run along its track at a high velocity, so there will be an opportunity of judging of its capabilities. Mr. Maxim's workshop will be open to visitors, and his scientific apparatus will be on view. There will also be a practical display of the Maxim automatic machine guns. This method of obtaining funds for hospital work is worth developing. We hope it will meet with the success it deserves. Perhaps the time will soon come when the public will take as much interest in a scientific invention as it does in a good picture.

Two Russian Kalmuks from the lower Volga, one of them a Buddhist priest, have recently spent some time in Thasa, and the *Comptes-rendus* of the Paris Geographical Society expresses the hope that they may be able to make public some interesting facts about the sacred city, from which all Europeans have been rigidly excluded for the last half-century.

The provisional programme issued by the Royal Geographical Society for the Session 1894–5 shows that the Society is responding to the more general interest now being taken by its Fellows in the serious study of geography. The rooms of the Society have been altered and greatly improved, better accommodation being provided for the large collection of maps to which the public has free access, and for the library. A large room has been added to the library for the use of Fellows who wish to carry on special study undisturbed. A new series of technical meetings is to be instituted, at which important papers may be discussed by specialists, and the investigation of the scientific aspects of geography encouraged. It has long been felt that the evening meetings did not serve this purpose, the lateness of the hour and the presence of a large general audience preventing anything like technical discussion or detailed criticism. The new afternoon meetings are intended for specialists only, and they will take place in the map-room of the Society as frequently as occasion arises.

Evening lectures will continue to be a prominent feature of the activity of the Royal Geographical Society, and the Session will be opened on November 12 by Mr. H. H. Johnston, C.B., who will speak of the British Central Africa Protectorate, of which he is Administrator. The two following meetings will also be devoted to Africa, Mr. Walter B. Harris giving an account of his recent visit in disguise to the oasis of Tafilet in Southern Morocco, and M. Lionel Decle describing his adventurous journey from the Cape to Uganda. Papers are also promised by Mr. Basil H. Chamberlain on the Luchu Islands, Mr. O. Howarth on the Sierra Madre of Mexico, Mr. D. G. Hogarth on recent explorations in Asia Minor, Mr. G. G. Dixon on North-west British Guiana, Mr. S. Butcher on Luristan, Mr. H. Weld-Blundell on Cyrenaica, Mr. W. M.

Conway on the Alps, their limits, structure, and physiognomy, and Mr. C. Raymond Beazeley on a new Periplus of the Erythrean Sea. Mr. J. Theodore Bent, who starts immediately on a new journey from Oman to Aden across Arabia, hopes to return in time to give an account of his travels. The Christmas lectures to young people will be continued, the lecturer this year being Dr. H. R. Mill, and the subject "Holiday Geography."

WE have received a new instalment of the "Annals" (Ejegodnik) of the Russian Geographical Society, vol. iii. 1894, which is on the same high level as the preceding issues of the same series. It contains a review of astronomical, geodetical, and cartographical work done in the year 1892 by the geodetists and topographers of the Ministry of War, and of the hydrographic work done in 1891 by the officers of the Navy. The meteorological and hydrological observations made by officers of the Russian Navy are discussed by P. A. Mordovin; and also the work of the officers of the Ministry of Ways. E. E. Leist gives a review of the work done in the domain of terrestrial magnetism, magnetic anomalies, and magnetic perturbations in Russia; S. N. Nikitin sums up the progress of geological exploration in the Russian Empire; B. Y. Sreznewski deals with the progress of Russian meteorology; and N. I. Kuznetsoff gives an elaborate review of the work done in the domain of botanical geography in Russia, and partly also in West Europe. All these papers are supplied with full bibliographical indexes.

IN the same "Annals," M. Nikitin, who is undoubtedly the highest authority on the Glacial period in Russia, sums up our present knowledge as regards the supposed inter-glacial deposits in East Europe. In his well-known work on the glaciation of Russia, published in 1886, he pointed out that the theory of a double glaciation is utterly inapplicable to that country, and that, if a second glaciation really has existed in Europe, it did not exist in Russia, which must have been free of ice during the period when the ice is supposed to have invaded Europe for a second time. True, a young geologist, M. Krischtafowitsch, announced, in 1891, the discovery of inter-glacial deposits about Moscow, and his article had been quoted in West Europe as a confirmation of the double glaciation theory; but the following year, when his observations were made with greater accuracy, he hastened to recognise that he had too rashly built up his theory. M. Nikitin's opinion is, therefore, that, although the whole question cannot yet be considered as finally settled, there are no facts whatever which the theory of an inter-glacial period in East Europe might be built upon; on the contrary, the facts point to a single glaciation.

THE gradual but somewhat tardy recognition of the part played by motor elements in consciousness in the localisation of objects in space, forms an interesting chapter in the history of the progress of psychological interpretation. A valuable contribution to this subject is to be found in a paper on the localisation of sound, by Prof. Münsterberg and Mr. A. H. Pierce, in the current number of the *Psychological Review*. It is based on a careful experimental investigation, and goes far to establish Prof. Münsterberg's theory, that the assigning of direction to sounds rests upon the union of sensations of sound and motor sensations, the latter originating from actual or intended movements of the head in the direction of the sounding body. The paper, which well illustrates the value of experimental research in psychology, deserves the careful attention of all those who are interested in the psychological aspect of the problems of space.

AN investigation that furnishes a new point of view from which to consider the undoubted Arachnid affinities of that morphological puzzle, the American king-crab, *Limulus*, is described in the *Zeitschrift f. wiss. Zoologie*, vol. lviii. part 1 issued last July. The author is Dr. A. Jaworowski, of Lemberg, and he has traced out the development of the so-called "lung" in a spider, *Trochosa singoriensis*. He finds that this organ does not arise directly as such, but is formed in ontogeny by the secondary modification of a true trachea, which consists at first of a funnel-shaped external or stigmatic chamber, a common tracheal stem, and a bundle of delicate terminal tubules, penetrating some distance into the body. The tracheal tubes gradually atrophy, and on the walls of the external chamber or air-sac, which considerably enlarges, arise a number of parallel lamelliform folds, at right angles to the course of the common tracheal stem. From these structures, which in their early stages recall the appearance presented by the transverse striations of the tracheæ in insects, the respiratory lamellæ of the "lung" are derived. Development thus establishes the Tracheate origin of the Arachnida, and opposes the view that the lungs of spiders have arisen as modifications of the gill-books of a *Limulus*-like ancestor; though Dr. Jaworowski holds that the converse of this proposition—that the gill-books of *Limulus* have been evolved by the modification of Arachnid lungs—is very probably true. Simroth's view that *Limulus* is essentially a land animal, secondarily adapted to a marine existence, is thus confirmed; and Dr. Jaworowski does not hesitate, after a discussion of the nature of the Crustacean gill, to derive the whole phylum Crustacea from the Tracheate stem.

HERREN KOHLRAUSCH and Heydweiler appear to have approximated more closely to the preparation of absolutely pure water than any previous observers. In a paper on the subject, published in the current number of *Wiedemann's Annalen*, they describe the manner in which they prepared and tested the samples of pure water. Water distilled in air shows, even with the greatest precautions, an electric conductivity of $0{\cdot}7 \times 10^{-10}$ at 18°C., mercury being the unit. Distillation in a vacuum of about 0·01 mm. reduces this conductivity to $0{\cdot}25 \times 10^{-10}$, but into this value the solubility of the glass enters as a disturbing factor. A glass vessel employed for the purpose ten years ago had been constantly kept filled with water, with the result that the value for the conductivity found with what was now practically insoluble glass was as low as $0{\cdot}04 \times 10^{-10}$. This value was greatly influenced by changes of temperature, being about 0·014 at 0°, and 0·18 at 50°, but this behaviour had been predicted by the theory of dissociation. The authors now endeavoured to find the true conductivity of absolutely pure water by extrapolation, on the basis of the change of the temperature coefficient with increasing impurity, as given by the theory of dissociation. The value thus obtained for the conductivity of absolutely pure water at 18° C. was $0{\cdot}036 \times 10^{-10}$. It will be seen that the extrapolation only amounted to 10 per cent. The amount of residual impurity was estimated at a few thousandths of a milligramme per litre, which is 10,000 times less than the amount of air normally absorbed from the atmosphere. A curious phenomenon observed in the course of these measurements was the temporary increase of conductivity of the water when the current was of any considerable duration, an increase which sometimes amounted to 100 per cent. The amount of dissociated hydrogen in a cubic metre of water at 18° is calculated to be 0·08 milligrammes, at 0° only 0·036 milligrammes, and at 100° 0·85 milligrammes. Small as are these numbers, they still mean thousands of millions of atoms to the cubic mm., *i.e.* intervals between neighbouring atoms of the order of wave-lengths of light. In our conception, and even in miscroscopic vision, these free atoms of hydrogen would still appear to fill space continuously. That Ohm's law still holds for such a solution is not surprising.

In a paper contributed to *L'Eclairage Electrique*, Signor L. Palmieri gives an account of the results he has obtained during the last few years in his study of the earth-currents at the Vesuvius Observatory. One of the earth-lines used terminates in a large copper plate buried in a well at the little village of Résina at the base of the mountain, and follows the direction S.W.–N.E. to the Observatory, where it is taken almost vertically down from the observing room and connected with the lightning-conductor. A shorter line has been tried in several azimuths, but has finally been permanently fixed in a N.W. direction from the Observatory. At first an ordinary astatic galvanometer with rather long magnetic needles was used, but it was found that the powerful currents which passed during thunderstorms often demagnetised the needles, or even magnetised them in the reverse direction. The ordinary form of suspended coil D'Arsonval galvanometer was also found to be subject to the objection that if the metallic suspension was sufficiently fine to allow of the small currents ordinarily obtained being recorded, then the large currents sometimes obtained fused the suspension. Finally the author, after consulting with Marianini, designed an instrument which essentially consists of a small electro-magnet the coils of which are connected to the earth-line and a magnetised needle suspended above this magnet. After more than a year of continuous observation, the author had come to the conclusion that the earth-currents were always from the lower station to the higher; but towards the end of August 1893, the currents commenced to vary in direction, and finally settled down in the opposite direction to that they had taken since 1889, when observations were first started. The change in the direction in the earth-currents occurred at a period when the volcano was more than usually active; but in January and February 1894 the volcano became much less active, and the earth-currents first decreased in intensity and then resumed their old upward direction. The activity, however, broke out again, at the central crater this time, and the earth-currents again changed their direction. In every case it has been found that when the volcano is quiescent the earth-currents ascend, but when the volcano's activity increases, the earth-currents at once change their direction and pass from the higher station to the lower. On June 7, 1891, when the lava made its first appearance, it was noticed that the needle of the astatic galvanometer at that time employed was continually in movement; and this movement was very irregular, the needle often behaving as if it had received a sudden blow.

A brief summary of the analytical work required for the practical examinations in inorganic chemistry of the Science and Art Department is given in "A Laboratory Guide and Analytical Tables," by Mr. James Grant (Smith and Wood, Manchester).

The October number of the *Proceedings* of the Physical Society of London (vol. xiii. part i.) has been published. It contains thirteen papers and six plates. The *Journal* of the Royal Microscopical Society, for October, has also just been issued.

Messrs. Williams and Norgate have issued the sixtieth number of their scientific book circular, in which are catalogued new scientific publications, mostly of foreign origin, offered for sale by them. A similar catalogue has been received from Mr. J. H. Knowles, Lavender-hill, London, S. W.

The *Electrician* Printing and Publishing Company are just issuing "Electric Lamps and Electric Lighting," by Dr. J. A. Fleming, F.R.S. The same publishers also announce, as ready shortly, "Electric Motive Power," with chapters specially dealing with the use of electricity in mines for lighting, haulage, pumping, coal-getting, &c. This latter work is by Mr. Albion T. Snell.

Under the title "Régularisation des Moteurs des Machines Électriques," M. P. Minel has completed a series of four volumes, which he has written for the Encyclopédie scientifique des Aide-Mémoire, on electricity and its applications to navigation. This new work has recently been published by MM. Gauthier-Villars, and also a volume on "Fortification," by Lieut.-Colonel Hennebert.

Mr. Elliot Stock has published a cheap edition of "A Manual of Exotic Ferns and Selaginella," by Mr. E. Sandford. The book comprises descriptions of more than one thousand species and varieties, and upwards of six hundred synonyms, as well as notes on the history, culture, and management of the plants considered. Amateur, and also professional, horticulturists will find the volume useful.

The Geographical and Geological Commission of São Paulo, Brazil, has for some years published useful climatological data for that province. The last we have received is for the year 1892, and contains monthly and yearly means for twelve stations, and also for Rio de Janeiro, with a good general discussion, of the data for each place, by Sr. Schneider. As this State forms part of the coffee-growing region of Brazil, the publication of these summaries is of interest, both from scientific and commercial points of view.

Four lectures on biology, delivered by Dr. R. W. Shufeldt, before the Catholic University of America, in January 1892, have been reprinted from the *American Field*, and published in pamphlet form. The lectures deal with the history and present domain of biology; the relation of biology to geology; the value of biological study; and the growth and future influence of biology. They caused considerable stir at the time, for Dr. Shufeldt did not mince matters in presenting an account of the bearing of Catholicism to early scientific investigation. Nothing can be found in them, however, that is not sustained by the best of evidence.

Dr. Béla Haller has revised his numerous researches upon the morphology of Prosobranchiate molluscs, and has incorporated them in the form of a handsome quarto monograph entitled "Studien über Docoglosse und Rhipidoglosse Prosobranchier nebst Bemerkungen über die phyletischen Beziehungen der Mollusken untereinander," published by Engelmann, of Leipzig. The student of molluscan morphology will find there a lucid and admirably illustrated exposition of anatomical data, and will not fail to be stimulated, if only to opposition, by Haller's peculiar views on the phylogeny and inter-relations of the different molluscan groups.

Every student of physical chemistry unfamiliar with the German language will welcome a "Manual of Physico-Chemical Measurements" (Macmillan and Co.), translated by Dr. James Walker from Prof. W. Ostwald's standard work. The German edition was reviewed in these columns at the beginning of this year (Nature, vol. xlix. p. 219), and it was then remarked that the manual was the only guide to measurements in physical chemistry suitable for service in the laboratory. The book is not intended for the beginner, but for the chemist and physicist who desires to become practically acquainted with the region common to both of them. Dr. Walker's admirable translation will doubtless considerably increase the sphere of usefulness of Prof. Ostwald's work.

A second edition of the late Thomas Laslett's classical work on "Timber and Timber Trees" (Macmillan and Co.), completely revised, with numerous additions and alterations, by Prof. Marshall Ward, has just been published. The arrangement of the work has been completely altered, and the numerous advances that have been made in our knowledge of timber and its properties since 1875, when the first edition was published, have been taken into account. The work now consists of four parts. The first part deals with timber in general; in part ii. the timbers of Dicotyledonous trees are considered; part iii. deals with Coniferous timber trees; and the fourth part chiefly consists of tables showing the results of experimental investigations on the physical properties of timber. The book has been of valuable service to the shipwright and carpenter from the time it first appeared; and Prof. Ward's revision has certainly given it a new lease of life.

THE appearance of a second edition of Lord Rayleigh's "Theory of Sound" (Macmillan and Co.) reminds us that the first edition was reviewed in these columns by that eminent investigator, Hermann von Helmholtz, nearly seventeen years ago. Much additional matter has been included in the new edition, and the subject is carried to the limits of the present state of knowledge. Two new chapters have been interpolated, devoted to curved plates or shells, and to electrical vibrations. It was the author's original endeavour to produce "a connected exposition of the theory of sound, which should include the most important of the advances made in modern times by mathematicians and physicists." This object has been borne in mind in the preparation of the new edition. Lord Rayleigh naturally inclines to physical methods of investigation, but purely mathematical solutions are not entirely eschewed. The work has been recognised as a masterly exposition of a difficult subject ever since it first appeared, and the second edition maintains the high standard of the original.

AN important memoir concerning nitrogen trioxide, nitrous anhydride, N_2O_3, is communicated by Prof. Lunge and Herr Porschnew to the current issue of the *Zeitschrift für Anorganische Chemie*. It is claimed that the investigation, whose results are now published, finally disposes of all doubt as to the existence of this much discussed oxide of nitrogen. The main conclusion derived from the work is that nitrogen trioxide is a well characterised individual substance, which is readily formed under ordinary atmospheric pressure below the temperature of −21° by the union of nitric oxide NO and nitrogen peroxide N_2O_4, and constitutes an indigo-blue liquid. It is stated to be perfectly stable at and below this temperature; but at a temperature slightly superior to this, even under pressure, it commences to decompose, and the dissociation is almost complete upon the conversion of the liquid into gas. Nitrous anhydride in a condition of purity thus appears to be incapable of existence in the gaseous state, while forming a comparatively stable liquid at temperatures below −21°. The gaseous product of dissociation, a mixture of nitric oxide and peroxide, exhibits similar chemical properties to those which might have been expected of gaseous nitrogen trioxide, hence of course the difficulty which has been experienced in deciding the question. It is pointed out, however, that the absolute incapability of existence of gaseous molecules of nitrogen trioxide is not proved, and the results of the investigation would appear to indicate that a residue of such molecules does escape dissociation upon the passage of the liquid into the gaseous state, and exists side by side with the molecules of the decomposition products. The experiments upon which these conclusions are based are mainly the following. It was first established that nitric oxide and nitrogen peroxide exhibit only the very slightest inclination to unite chemically at the ordinary temperature and at temperatures up to 100°. It was next found that at the temperature of −21° the two oxides combined in practically exactly molecular proportions to form the indigo-blue liquid. The exact amount of N_2O_3 present in one of the specimens analysed is stated to have been 98·3 per cent. The well known work of Ramsay and Cundall upon this subject is, of course, quoted, and it is stated that the apparently small amount of absorption of nitric oxide by liquid nitrogen peroxide, corresponding to only 3·5 per cent. of N_2O_3, observed during that investigation, was due to the loss of weight by mechanical removal of a portion of the nitrogen peroxide in the stream of issuing nitric oxide. It was further demonstrated that the product of the action of oxygen upon nitric oxide gas behaves, particularly towards sulphuric acid, precisely like a mixture, which it probably is, of nitric oxide and nitrogen peroxide. Moreover, the vapour derived from liquid nitrogen trioxide is not stable towards oxygen, but becomes further oxidised until it is almost pure peroxide. The memoir will be found to include an admirable summary of the literature of the subject, together with the views of Prof. Lunge concerning the bearing of the main conclusions of the investigation upon the theory of the sulphuric acid manufacture.

THE additions to the Zoological Society's Gardens during the past week include a Vervet Monkey (*Cercopithecus lalandii*) from South Africa, presented by Mr. Seymour Willoughby; a Pig-tailed Monkey (*Macacus nemestrinus*) from Java, presented by Mr. H. M. Vincent; a Tiger (*Felis tigris*) from Amoy, China, presented by Mr. Robert Bruce; a Tiger Cub (*Felis tigris*) from Burmah, presented by Mr. John Halliday; a Ring-tailed Coati (*Nasua rufa*) from South America, presented by Mr. J. E. Symonds; two Brazillian Caracaras (*Polyborus brasiliensis*) from South America, presented by Lord Lilford; two Grey-breasted Parrakeets (*Bolborhynchus monachus*) from Monte Video, presented by the Inns of Court Hotel Company; an Egyptian Jerboa (*Dipus ægyptius*) from Egypt, a Patagonian Conure (*Conurus patagonus*) from La Plata, two Brazilian Cariamas (*Cariama cristata*) from South-east Brazil, deposited.

OUR ASTRONOMICAL COLUMN.

TRIANGULATION OF SIXTEEN STARS IN THE PLEIADES.—In addition to the great interest that has always been attached to this bright group of stars, the Pleiades, as can be gathered from the numerous myths (NATURE, vol. xlix. p. 366) which have been handed down to us, their value to the practical astronomer has been by no means small. In most astronomical measurements, observations have first to be made on stars the positions of which are accurately known, in order to determine the instrumental constants: thus, for instance, the pitch of micrometer screws, ring micrometer constants, &c. The Pleiades, as they consisted of a group of bright stars suitable for such determinations, were constantly used for these purposes, and this necessitated a previous complete knowledge of their positions and motions.

At the present day, however, the stars in the Pleiades group are rather of too bright a nature and too varied in magnitude for very accurate determinations of instrumental constants, and the tendency is now to turn to that group of stars in Perseus, which is more suitable in many respects. A recent triangulation of this region has lately been undertaken by Prof. Wilhelm Schur at Göttingen, with the large heliometer, the results of which appeared in the *Proceedings of the Royal Society of Sciences of Göttingen*. The triangulation to which we wish to refer is of sixteen stars in the Pleiades, and has been made by Dr. Leopold Ambronn at the Göttingen Observatory (*Astronomische Mittheilungen von der Königlichen Sternewarte zu Göttingen*, Bd. xxxix. 3 part).

The instrument employed, a good illustration of which is given, was the small Fraunhofer heliometer, which in earlier times was used in the two Venus Expeditions of this century. It might at first sight seem superfluous to attempt this triangulation with such a small instrument, when we are already acquainted with the results obtained from larger heliometers.

The value of this investigation lies, however, in the very minute determinations of the instrumental constants, and these would be interesting even if nothing more were attempted.

Dr. Ambronn has, however, after making these instrumental constant determinations, measured the positions of sixteen of the Pleiades stars, and compared them with the results obtained